

1. An authentication mark (10) to be applied to a substrate (16, 116, 216) for aiding in the determination of whether the substrate (16, 116, 216) is authentic, comprising:

a first image (110, 210) comprising a first compound (12, 112), the first compound (12, 112) adapted to be altered between at least a first state and a second state, wherein a change from the first state to the second state suggests that the substrate (16, 116, 216) is authentic.
2. The authentication mark (10) according to claim 1, wherein the change from the first state to the second state is a visual change.
3. The authentication mark (10) according to claim 1, wherein the change from the first state to the second state is a tactile change.
4. The authentication mark (10) according to claim 1, wherein the change from the first state to the second state is an olfactory change.
5. The authentication mark (10) according to any of claims 1-4, wherein the first state occurs under a first condition and the second state occurs under a second condition.
6. The authentication mark (10) according to any of claims 1-5, wherein the first compound (12, 112) is thermo-chromic.
7. The authentication mark (10) according to any of claims 5-6, wherein the first condition comprises a first temperature between approximately 18°C and approximately 23°C and the second condition comprises a second temperature at least one of below approximately 18°C and above approximately 23°C.
8. The authentication mark (10) according to any of claims 1-5, wherein the first compound (12, 112) is photo-chromic.
9. The authentication mark (10) according to any of claims 5 and 8, wherein the first condition comprises a first light with a first wavelength within the range of approximately 400nm to approximately 700nm and the second condition comprises a second light with a second wavelength at least one of below approximately 400nm and above approximately 700nm.

10. The authentication mark (10) according to any of claims 1-5, wherein the first compound (12, 112) is phosphorescent or fluorescent.
11. The authentication mark (10) according to any of claims 5-10, wherein the first condition comprises a first intensity of light and the second condition comprises a second intensity of light, the second intensity of light being less than the first intensity of light.
12. The authentication mark (10) according to any of claims 1-11, wherein when the first compound (12, 112) is in the first state, the first compound (12, 112) has a first appearance and when the first compound (12, 112) in the second state, the first compound (12, 112) has a second appearance, wherein the second appearance is different from the first appearance.
13. The authentication mark (10) according to claim 12, wherein the first appearance is at least one of a first color, a first pattern, a first level of visibility and a first level of intensity and the second appearance is at least one of a second color, a second pattern, a second level of visibility and a second level of intensity.
14. The authentication mark (10) according to any of claims 1-2 and 5-13, wherein the first compound (12, 112) in the first state does not visibly glow and the first compound (12, 112) in the second state visibly glows.
15. The authentication mark (10) according to any of claims 1-2 and 5-14, wherein the first image (110, 210) is invisible when in the first state and the first image (110, 210) is visible when in the second state.
16. The authentication mark (10) according to any of claims 1-2 and 5-15, wherein the first image (110, 210) is visible when in at least one of the first state and the second state.
17. The authentication mark (10) according to any of claims 1-16, wherein the first image (110, 210) comprises at least a portion of one of a trademark, letter, number, logo and barcode.
18. The authentication mark (10) according to any of claims 1-16, in combination with the substrate (16, 116, 216).
19. The combination according to claim 18, wherein the substrate (16, 116, 216) is a product or product packaging.

20. The authentication mark (10) according to any of claims 1-19, further comprising a second image (24, 124) comprising a second compound (14, 114, 214).
21. The authentication mark (10) according to claim 20, wherein the second image (24, 124) is not visible to the naked eye.
22. The authentication mark (10) according to any of claims 20-21, wherein the second compound (14, 114, 214), in response to irradiating light, absorbs or emits wavelengths outside the visible range.
23. The authentication mark (10) according to any of claims 20-22, wherein the second compound (14, 114, 214) is phosphorescent or fluorescent.
24. The authentication mark (10) according to any of claims 20-23, wherein the second image (24, 124) comprises at least a portion of one of a trademark, letter, number, logo and barcode.
25. The authentication mark (10) according to any of claims 20-24, wherein the first image (110, 210) is on a first portion of the substrate (16, 116, 216) and the second image (24, 124) is on a second portion of the substrate (16, 116, 216).
26. The authentication mark (10) according to claim 25, wherein the first portion of the substrate (16, 116, 216) intersects with at least a portion of the second portion of the substrate (16, 116, 216).
27. The authentication mark (10) according to any of claims 25-26, wherein the first portion of the substrate (16, 116, 216) is the same as the second portion of the substrate (16, 116, 216).
28. The authentication mark (10) according to claim 25, wherein the first portion of the substrate (16, 116, 216) is separate from the second portion of the substrate (16, 116, 216).
29. The authentication mark (10) according to any of claims 1-28, wherein the first image (110, 210) comprises a hologram.
30. The authentication mark (10) according to any of claims 1-29, wherein the first compound (12, 112) is adapted to be altered by a consumer between the first and second states.

31. A method of authenticating a substrate (16, 116, 216) having an authentication mark (10) on the substrate (16, 116, 216), wherein a consumer can perform at least a portion of an authentication, the mark (10) comprising a first image (110, 210), wherein a first compound (12, 112) is used to create at least a portion of the first image (110, 210), the first compound (12, 112) adapted to be altered between at least a first state and a second state, the method comprising:

viewing the first image (110, 210) when the first compound (12, 112) is in the first state;

changing the first compound (12, 112) from the first state to the second state;

viewing the first image (110, 210) when the first compound (12, 112) is in the second state; and

determining whether the mark (10) is authentic based on a change between the first and second states.

32. The method according to claim 31, further comprising:

viewing a second compound (14, 114, 214) that is not visible to the naked eye through a detection device, the second compound (14, 114, 214) being used to create a second image (24, 124), the second image (24, 124) being at least a portion of the mark (10).

33. The method according to any of claims 31-32, further comprising:

applying the mark (10) to the substrate (16, 116, 216).

34. The method according to any of claims 31-33, further comprising applying the mark (10) with a printer.

35. The method according to any of claims 31-34, further comprising applying the mark (10) with an inkjet printer.

36. The method according to any of claims 31-35, further comprising:

applying the first compound (12, 112) and the second compound (14, 114, 214) simultaneously to the substrate (16, 116, 216).

37. The method according to any of claims 31-35, further comprising:

applying the first compound (12, 112) to the substrate (16, 116, 216) at a different time than the second compound (14, 114, 214).